# MYCOLOGIA

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## ILLUSTRATIONS OF FUNGI—XXIV

WILLIAM A. MURRILL

The species figured on the accompanying plate all belong to the genus *Lactaria,* which has been monographed, so far as the North American species are concerned, by Dr. Gertrude S. Burlingham. The drawings were made by Miss Eaton from specimens collected in or near New York City. For descriptions of the five species of *Lactaria* previously figured in this series, see *Mycologia* **3**: *pl. 49,* **6**: *pl. 132,* and **7**: *pl. 160, 163.* The writer is indebted to Dr. Burlingham for generous assistance with this article.

### **Lactaria atroviridis** Peck

DARK-GREEN LACTARIA

Plate 187. Figure 1. × 1

Pileus fleshy, nearly plane, soon depressed at the center, 6–10 cm. broad; surface olivaceous, azonate, dry, scabrous-hairy, sometimes cracking into small areas, margin involute, at length spreading to uplifted; context compact, white; latex white, staining the lamellae green after some time, acrid; lamellae whitish, becoming mottled with green, especially where injured, sometimes forking near the stipe, crowded, adnate to slightly decurrent, rather narrow; spores creamy-white, subglobose, echinulate, 7–8 $\mu$; stipe colored like the pileus or paler, spotted, equal, dry, glabrous, firm, soon hollow, 2–5 cm. long, 1–2 cm. thick.

Very rare in deciduous woods from New York to the District of Columbia. The specimens figured were collected by Dr. W. S.

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Thomas at Plandome, Long Island, September 15, 1912. The color of fresh specimens somewhat resembles that of *Russula virescens,* but the surface is darker green and both pileus and stipe are spotted, glabrous to the unaided eye, reticulate-appressed-fibrillose under a lens. The lamellae are white, becoming olivaceous in spots; the latex at first mild, slowly becoming decidedly acrid.

**Lactaria hygrophoroides** Berk. & Curt.

*Lactaria distans* Peck

DISTANT-GILLED LACTARIA

Plate 187. Figure 2. × 1

Pileus fleshy, convex, then plane, depressed at the center, sometimes becoming infundibuliform, 4–10 cm. broad; surface yellowish-buff, bistre, or fulvous, azonate, dry, very minutely pruinose-velvety, appearing as though pulverulent, sometimes rugose, sometimes rimose-areolate; margin involute, then spreading or uplifted; context firm, whitish, odorless, edible; latex white, unchanging, not staining the flesh or lamellae brownish, mild; lamellae whitish to cream-colored or yellowish-buff, not discoloring where injured, not forking, distant, sometimes connected by rugose elevations, adnate to slightly decurrent, about 3 mm. broad; spores white, globose to broadly ellipsoid, minutely echinulate, 8–10 $\mu$ in diameter; stipe of the same color as the pileus, nearly equal, glabrous, sometimes pruinose, stuffed and firm, 2–5 cm. long, 0.5–1.5 cm. thick.

On the ground in mixed woods throughout most of the eastern United States, but not so abundant as *Lactaria lactiflua,* which it much resembles. Its bright colors, velvety surface, distant gills, and lack of odor should distinguish it. The flesh is of good flavor and edible; the latex white, unchanging, mild, and very abundant. *Lactaria luteola* and *Lactaria subvelutina* are other closely related species. The poisonous *Lactaria rufa* is bay-red to rufous and very acrid.

**Lactaria testacea** sp. nov.

PALE-BRICK-COLORED LACTARIA

Plate 187. Figure 3. × 1

Pileus convex to expanded, deeply depressed at the center, solitary, 7 cm. broad; surface distinctly viscid, glabrous, smooth,

slightly zonate, testaceous to ferruginous-orange; context rather thin, white, somewhat acrid; lamellae narrow, adnexed, many times inserted, of medium distance, cream-colored; latex not obtained, either from context or lamellae, but the latter became stained as though a latex were present; spores subglobose to broadly ellipsoid, echinulate, hyaline, 7–9 $\mu$ long; stipe subcylindric, glabrous, smooth, white, suffused with dark-cremeous stains, solid, white within, 4 cm. long, 14 mm. thick.

Type collected on the ground in deciduous woods near the New York Botanical Garden in September, 1911, by W. A. Murrill. Not found since.

**Lactaria maculosa** sp. nov.

MILD-FLAVORED SPOTTED LACTARIA

Plate 187. Figure 4. × 1

Pileus convex to subexpanded, decidedly depressed at the center, reaching 10 cm. broad; surface smooth, glabrous, somewhat viscid, blotched or spotted, avellaneous-isabelline; context rather thick, white, unchanging, mild; lamellae adnate, arcuate, narrow, inserted, crowded, dull-whitish to rosy-isabelline; latex white, becoming slightly yellow on exposure, perfectly mild; spores globose or subglobose, strongly echinulate, hyaline, 8–10 $\mu$ in diameter; stipe short, sharply tapering downward, similar to the pileus in color and surface markings but with more white intermixed, hollow, white within, except at the base, where it is lilac-tinted, 5 cm. long, 2 cm. thick.

Type collected on the ground in woods near the New York Botanical Garden, September 7, 1911, by W. A. Murrill. Found only once. In general appearance this species resembles *Lactaria maculata*, but the latex of the latter is acrid and unpleasant.

**Lactaria torminosa** (Schaeff.) Pers.

WOOLLY LACTARIA

Plate 187. Figure 5. × 1

Pileus fleshy, convex, depressed at the center, finally nearly infundibuliform, 4–10 cm. broad; surface pale-pinkish-yellow or pale-ochroleucous or ochraceous tinged with incarnate, often zoned with deeper color, sometimes nearly white and azonate, viscid when wet, glabrous at the center; margin involute at first, then merely deflexed, persistently covered with long, white tomen-

tum; context firm, white, not changing color, poisonous; latex white, unchanging, very acrid; lamellae whitish or cream-yellow tinged with pale-incarnate, some forking near the stipe, crowded, decurrent, thin, 5 mm. broad; spores hyaline, broadly ellipsoid, echinulate, uniguttulate, 8–10 × 6–8 μ; stipe paler than the pileus, sometimes faintly spotted with yellow, equal or tapering downward, glabrous or pruinose, smooth, stuffed, becoming hollow, 3–7 cm. long, 2 cm. or less thick.

Not uncommon in deciduous or coniferous woods from Maine to Alabama and west to Colorado. The specimens figured are rather small, but they serve to illustrate the chief characters of the species, which should be readily recognized by its persistently woolly margin and very acrid taste. It differs from *L. cilicioides* in being azonate with tomentose disk and white to flesh-colored tinged with fuscous. In the raw state, this species causes painful gastro-intestinal disturbance in man, but the poison is said to be destroyed by heating. Ford has studied its action on animals and has demonstrated that it can produce an acute intoxication with only a few of the characteristic muscarin symptoms.

NEW YORK BOTANICAL GARDEN.

# PHOTOGRAPHS AND DESCRIPTIONS OF CUP-FUNGI—III. PEZIZA DOMICILIANA AND PEZIZA REPANDA

FRED J. SEAVER

(WITH PLATES 188 AND 189, CONTAINING 4 FIGURES)

The above species of fungi, on account of their superficial resemblance, have been frequently confused. Indeed there might be some difference of opinion as to whether the two represent different species or only forms of the same species whose differences are due entirely to the difference of habitat.

*Peziza domiciliana* was originally described by Cooke from specimens found growing on the walls, ceilings, and floors of a house which had been partly destroyed by fire. The specific name is a very appropriate one, since, from our own observations, the species usually occurs about the cellars of houses and in caves.

The species was first encountered by the writer in Iowa, where it was found growing in the basement of one of the college buildings at Iowa Wesleyan University. There it grew on piles of damp coal-dust which had been left over from the winter's supply. The plants were described and illustrated in Iowa Discomycetes under the name of *Peziza repanda* Pers.

The species was next found in the basement of the museum building of the New York Botanical Garden where the ground was kept moist by the drip from an ice-box. The plants grew on sandy or gravelly soil, as indicated by the particles adhering to the base of the apothecia.

On March 10, 1914, the writer received still other specimens from Mr. Carl A. Schwarze, of the New Jersey Agricultural Experiment Station. These plants, which were found growing in the sand of a cutting bench in one of the greenhouses, were accompanied by the following description: "First of all the plants were gregarious, had a short but distinct stem, cups concave, nearly white and translucent when young, a yellowish-brown

when old, later becoming repand and umbelicate, and more or less angular. The stem is obscured by the expanding disc. The largest disc became convex and measured at least 10 cm."

In April of the same year, similar specimens were collected by Mr. L. O. Overholts in a mushroom cellar in Missouri. These specimens, which were referred to the writer, were accompanied by the following description: "Cups 3–8 cm. broad, somewhat stipitate, margin involute, depressed in the center, hymenium smooth, ochraceous-buff (Ridgw.) or somewhat more brownish, exterior covered with white meal."

All of the American specimens referred to above agree well with specimens of *Peziza domiciliana* from the herbarium of Cooke, so far as we can judge from dried specimens. According to Cooke, the apothecia are sessile, although in our American specimens they are, at least when young, short-stipitate. Also we have not noted any of the violet tints referred to by Cooke, although in his original description he allows for a rather liberal range of color. The spore measurements of the American and European specimens are identical. The young plants are always pure-white and usually the flesh when broken turns golden-yellow. This fact was noted by Bresadola and was found to be true of specimens collected in New York. Whether this character is constant, we are unable to say, since no attention was given to this in some of the plants when fresh. From the studies which have been made, the writer feels safe in referring our American plants to *Peziza domiciliana* Cooke, and also in regarding this species as distinct from *Peziza repanda* Pers.

*Peziza repanda* was described by Persoon, the original description being accompanied by an excellent colored figure. Although the species was originally reported on the ground by Persoon, subsequent authors have usually reported them on rotten logs. Whether Persoon's species actually grew on soil which was unmixed with wood it is impossible to determine, although it is not difficult to believe that the species might grow on either. Aside from this incident, Persoon's description and illustration fits the plants which are usually referred to this name. The following descriptions and illustrations will give a fair idea of our conception of the two species.

PEZIZA DOMICILIANA Cooke, Gardener's Chronicle **41**: 793. 1877

*?Octospora varia* Hedw. Descr. **2**: 22. 1788.
*Peziza Adae* Sadler; Cooke, Trans. Bot. Soc.. Edinburgh, **13**: 45. 1877.
*Peziza odorata* Peck, Bull. Torrey Club **23**: 420. 1896.
*Peziza varia* f. *typica* Bres. Fungi Trid. **2**: 75. 1898.

Apothecia gregarious or occasionally cespitose, usually short-stipitate when young, at first concave, soon becoming repand, leaving a depression in the center, at first rounded, becoming irregular and often decidedly angular, externally white, the margin entire or occasionally splitting, reaching a diameter of 10 cm., the substance when broken often turning golden-yellow; hymenium at first concave, becoming plane or convex and distinctly umbilicate, at first white, becoming dingy buff or brownish; stem not exceeding 1 cm. in length, thick, irregular, white, becoming obsolete with age; asci cylindric or subcylindric, reaching a length of 225 or 250 $\mu$ and a diameter of 15 $\mu$; spores ellipsoid, hyaline when young, often containing two small oil-drops, 13–15 $\times$ 8–10 $\mu$; paraphyses slender, septate, slightly enlarged above.

In cellars, mushroom-caves, and occasionally in greenhouses, usually growing on plaster, sand, gravel and coal-dust.

TYPE LOCALITY: Europe.

DISTRIBUTION: New York to Iowa and Missouri.

ILLUSTRATION: Trans. Bot. Soc. Edinburgh **13**: *pl. 3, f. a–i;* Cooke, Mycographia, *pl. 97, f. 349;* Bres. Fungi Trid. *pl. 188;* Bull. Lab. Nat. Hist. State Univ. Iowa **6**: *pl. 15, f. 2* (as *Peziza repanda* Pers.).

PEZIZA REPANDA Pers. Ic. Pict. Fung. 49. 1806

*Peziza pallidula* Cooke & Peck; Cooke, Bull. Buffalo Acad. Sci. **2**: 288. 1875.
*Peziza repanda amplispora* Cooke & Peck; Cooke, Bull. Buffalo Acad. Sci. **2**: 288. 1875.
*Peziza amplispora* Cooke, Mycographia 167. 1877.
*Aleuria repanda* Gill. Champ. Fr. Discom. 43. 1879.
*Peziza Stevensoniana* Ellis; Rehm Ascom. Lojk. 3. 1882.
*Geopyxis pallidula* Sacc. Syll. Fung. **8**: 70. 1889.

*Geopyxis amplispora* Sacc. Syll. Fung. **8**: 71. 1889.
*Discina repanda* Sacc. Syll. Fung. **8**: 100. 1889.
*Plicaria repanda* Rehm; Rab. Krypt.-Fl. $1^3$: 1007. 1896.
*Pustularia Stevensoniana* Rehm; Rab. Krypt.-Fl. $1^3$: 1019. 1896.
*Peziza varia* f. *lignicola* Bres. Fungi Trid. **2**: 76. 1898.

Apothecia sessile or very short-stipitate, at first cup-shaped, the margin even or crenate, externally white or whitish, expanding and becoming repand, the margin remaining entire or splitting, regular in outline or irregularly revolute, reaching a diameter of 8–10 cm.; stem short, stout, usually only a few mm. long or entirely wanting: hymenium concave, becoming plane or convex, pale-brown, becoming darker with age, even or convolute; asci cylindric or subcylindric, reaching a length of 225 $\mu$ and a diameter of 12–15 $\mu$; spores ellipsoid, hyaline, smooth, 14–16 $\times$ 8–10 $\mu$; paraphyses slender, slightly enlarged above, yellowish or brownish.

On rotten logs or occasionally on soil or chip piles.

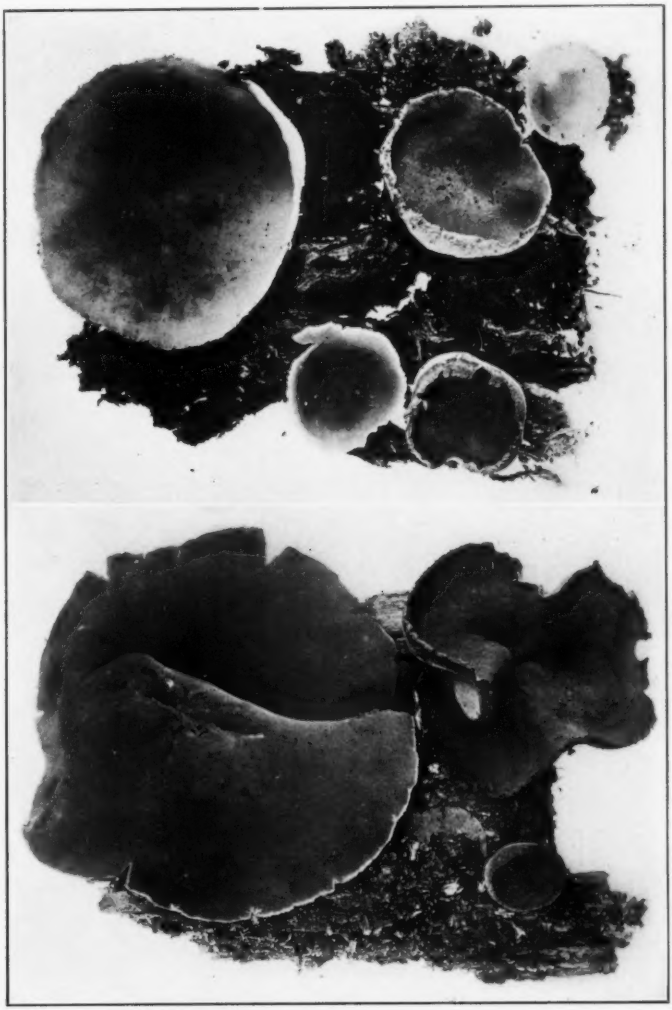
TYPE LOCALITY: Europe.

DISTRIBUTION: New York to Iowa and Maryland; also in Europe.

ILLUSTRATION: Pers. Ic. Pict. Fung. *pl. 20, f. 2*; Cooke, Mycographia *pl. 62, f. 240*; Bres. Fungi Trid. *pl. 189*; Minn. Bot. Studies **4**: *pl. 15*; Minn. Pl. Diseases *f. 64*.

NEW YORK BOTANICAL GARDEN.

PEZIZA DOMICILIANA COOKE



PEZIZA REPANDA PERS.

# NOTES ON THE MYXOMYCETES OF THE CURTIS HERBARIUM

WILLIAM C. STURGIS

The Curtis Herbarium possesses a unique interest for American taxonomists by reason of the fact that very many of the specimens are almost certainly co-types of species published by Berkeley. The only element of uncertainty in this respect is the rather remote possibility that more than one species may have been present in the same original gathering; but in the case of the *Myxomycetes* this is so remote as to be practically negligible, and we may feel certain that in examining the specimens of this group in the Curtis Herbarium we are dealing in many cases with material used by Berkeley in describing his species. Some of the specimens appear to be now in better condition than the corresponding material in the Berkeley herbarium at Kew. In the Curtis collection the specimens show only too plain evidence of having been brushed over, at some time, with an alcoholic solution of corrosive sublimate, and Miss Lister informs me that the same is true of the Berkeley specimens. Notwithstanding this treatment, however, most of the specimens are still fairly recognizable, and although Miss Lister's observations on the material at Kew and in the British Museum are of the utmost possible accuracy, a carefully annotated examination of the corresponding material in America may not come amiss to future students. This is the more desirable in that every examination entails a certain degree of loss of material, and though this loss may be partly compensated for by the preparation of permanent microscopic mounts, most observers, lacking any careful notes on the minute details of a specimen, prefer to secure such details for themselves from the actual specimen rather than to depend altogether upon a microscopic mount. Hence the depletion gradually proceeds to the vanishing point—a deplorable result where valuable type-material is concerned.

Through the courtesy of Dr. W. G. Farlow, I have been per-

mitted during the past eighteen months to spend as much time as seemed necessary upon a most careful study of every specimen of the *Myxomycetes* in the Curtis herbarium. The following notes are the result. As will be seen, most of the specimens referred to are of species published under the authority of Berkeley, Curtis, or Ravenel either separately or in collaboration. Of the 125 species contained in the collection, 39 come under this head. There are, however, a dozen or more Schweinitzian species represented by specimens from the Schweinitz herbarium, and therefore of special interest. In recording these notes, I have followed the order in which the specimens occur in the Curtis herbarium as at present arranged. The labels and such notes thereon as are of value, I have copied precisely as they stand, except that in certain cases where Curtis has transcribed the name incorrectly, I have used the correct form.

"DIDYMIUM CHRYSOPEPLUM B. & C. (1202) ad fol: dej: madida. June. Society Hill, S. C."

Through a clerical error Curtis writes "*chrysoseplon.*" The specimen is in wretched condition, but the white, calcareous stalk, small conical columella, and the "peridio globoso, exteriore furfuracea fulvo" of the original description, are characters applicable only to *Physarum melleum* (B. & Br.) Mass. The spores in the Curtis specimen are pale brown, almost smooth, 7.3–8.4 $\mu$ diam.

"226. DIDYMIUM COLUMBINUM B. & C. Venezuela coll. Fendler."

This name was never published by Berkeley; but Rostafinski (Monog., App., p. 13) refers to this Venezuelan specimen and calls it *Tilmadoche columbina* (Berk.). Miss Lister states (*in litt.* 6/21, '15) that she has no doubt that this specimen is *Physarum compactum* (Wing.), basing her judgment on the very slender capillitium and the absence of a columella. Of the Curtis specimen little remains except a number of white stalks with chalky fracture, and the remnants of a delicate, persistent capillitium with small rounded lime-knots; the violet-brown spores are minutely and irregularly spinulose and measure 8.5–10.5 $\mu$ diam. Under the circumstances, the absence of a central ball of lime in

the remnants of the capillitium is easily explained, and the reference of the specimen to *P. compactum* seems fully justified. Such being the case, however, it is evident that the name *Physarum columbinum* (Rost.) takes precedence of *Physarum compactum* (Wing.).

"DIDYMIUM CURTISII Berk. (1179) ad gram: & herb: viv: in Savannis. July, 1847. Society Hill, S. C."

As stated by Lister, this is typical *Badhamia rubiginosa* (Chev.) Rost. The dark, rather strongly spinulose spores measure 10–11.5 $\mu$ diam.

"DIDYMIUM DEALBATUM B. & C. Venezuela, coll. Fendler."

This specimen is undoubtedly a portion of the type of *Chondrioderma subdictyospermum* Rost. It corresponds precisely with Rostafinski's description. The earlier name was never published.

"(3510) DIDYMIUM LUTEOGRISEUM B. & C. Penna., 1851. Dr. Michener (484)."

This specimen, together with another similarly labelled in Michener's handwriting and bearing the same number (484) are apparently co-types, although the original note on the species (Grevillea, **2**: 65, 1873) does not give the number of the specimen referred to, nor does Rostafinski in referring to the same species later. The specimen labelled by Michener himself is in fine condition and is typical *Physarum polycephalum* Schw. It is interesting to note, however, that most of the sporangia in this specimen are single and therefore are of the so-called variety "*obrusseum.*"

"DIDYMIUM MEGALOSPORUM B. & C. (1205) ad folia dejecta. June. Society Hill, S. C."

The specific name appears on the label as "*megalospermum,*" but Berkeley wrote "*megalosporum.*" The specimen is typical *Didymium eximium* Pk. Lister relegated this species to varietal rank under *D. nigripes* (Lk.) Fr., and applied to the variety the designation "*eximium.*" This being the first name to be applied to the form after its transfer to varietal rank, it remains valid in accordance with Article 49 of the Vienna Rules of Nomenclature. If, however, *Didymium eximium* Pk. is regarded as a distinct

species, as it is by Macbride, evidently the name "*megalosporum* B. & C." takes precedence of "*eximium* Pk."

"5701 DIDYMIUM NECTRIAEFORME Berk. & Curt. fol. mort. Querc. coll. D. Murray. Mass. Sprague (828)."

This is a fairly abundant specimen of *Physarum virescens* Ditm., in good condition.

"DIDYMIUM OBRUSSEUM B. & C. ad folia. Cuba. C. Wright (799) B. & C. Fung: Cub; 532."

Two specimens are referred to under the original description (Journ. Linn. Soc., **10**: 348, 1868) i.e. Nos. 664 and 799 of Wright's Cuban Fungi, of which the first mentioned is the type. Both of these numbers are found in the Curtis herbarium, as well as the specimen collected by Lindheimer on leaves of *Gonolobus* in Texas and referred to under the second description of the species (Grevillea **2**: 53, 1873). Fortunately the co-type, No. 664, is in fairly good condition and is easily referable to *Physarum polycephalum* Schw., var. *obrusseum* (B. & C.) List. Through a clerical error on Curtis' part, the specific name on the Texas specimen appears as "*obfuscum*."

"(2987) DIDYMIUM, straw, leaves, sticks, etc., Sept. 1850. Santee Canal, S. C. Ravenel (1100)."

To this label Curtis has added the note, "D. xanthopo prox: sed floccis albis." The specimen is a co-type of *Didymium proximum* B. & C., which Berkeley differentiates from *D. xanthopus* on the ground of a difference in the color of the capillitium. It is, however, unquestionably the latter form.

"DIDYMIUM PRUINOSUM B. & C. 530. on sticks. Jan., 1857. Cuba, coll. Wright (269)."

Nothing remains of this specimen except one or two slender black stalks. The capillitium has disappeared. The few spores remaining are bright purple brown, minutely spinulose, and measure 10–11.5 $\mu$ diam. Lister refers it, doubtless correctly, to *Physarum compressum* A. & S.

"DIDYMIUM PUSILLUM B. & C. (1345) ad Herb. corrumpent. Septr. Society Hill, S. C."

The specimen shows a few crushed sporangia with delicate,

reddish stalks 0.75 mm. in height; membranous wall, venulose below; and pale brownish spores, almost smooth, and measuring 10–11.8 $\mu$ diam. Miss Lister (Monog., Ed. 2, p. 65) notes the confusion caused by the existence of two species under the one number in Berkeley's herbarium. The single specimen in the Curtis herbarium shows only *Physarum pusillum*.

"DIDYMIUM RADIATUM B. & C. ad fol. gram. Cuba. C. Wright (733). B. & C. Fung: Cub: 529."

A quantity of the circular, whitish bases of stalks and two or three stalks filled with crystalline nodules of white lime are all that is left of this specimen. Miss Lister refers it to *Didymium squamulosum* (A. & S.) Fr.

"DIDYMIUM RAVENELII B. & C. Aest. 1852. Sulphur Springs, N. C. Ravenel (1513)."

The few perfect sporangia show stout, brown or black stalks; a capillitium of delicate threads with pale, reddish, fusiform lime-knots; and pale violet-brown spores, very minutely spinulose and measuring 8.5–9.5 $\mu$. diam. It is evidently a faded specimen of *Physarum pulcherripes* Pk. I have elsewhere discussed the relationships and the synonomy of this species,[1] but the conclusion therein stated that the specific name *Ravenelii* might be retained was a mistaken one, since the name given by Peck antedates the other by three months. That name was written "*pulcherripes*," and the original orthography should be retained. In connection with this species it is interesting to note the range of color exhibited in species of the "*P. globuliferum*" group, including the red of "*pulcherripes*," the brown of "*murinum*," the purple of "*pulcherrimum*." I have recently seen specimens collected by Mr. Hugo Bilgram, of Philadelphia, which are of a pinkish lilac color, and Professor Macbride has collected a pale blue form. In all of these the distinctions are based practically on color alone.

"DIDYMIUM TENERRIMUM B. & C. 533. "grayish." fol. Tillandsia etc. June 1857. Cuba. Coll. Wright (267)."

This is a co-type of *Physarum polycephalum* Schw. var. *obrusseum* (B. & C.) List.

[1] Transac. Conn. Acad. A. & S. Vol. X, Pt. 2, p. 468–470, 1900.

"6364 DIDYMIUM TERRIGENUM B. & C. ad terram argillaceam nudam. Julio. 1857. Hillsborough, N. C."

This very scanty and weathered specimen consists of a membranous hypothallus on which, originally, were seated closely crowded sporangia, now reduced to the remains of a capillitium consisting of rounded or angular, pale yellow lime-knots, connected by abundant slender threads. The spores are violet- or umber-brown, almost smooth, and measure 7.5–8 $\mu$ diam. Lister appears to me to have been correct in referring this to *Physarum virescens* Ditm. (Monog., Ed. 1, p. 60) rather than to *P. lateritium* as is done in Ed. 2 of the same work.

"ENTERIDIUM CINEREUM Schw. insuper putridas herbas effusum. Bethl. Herb. Schw. = ejus Lachnobolus."

"LACHNOBOLUS CINEREUS Schw. insuper stipites dejectos. Bethl. Herb. Schw. = ejus Enteridium."

Both of these specimens are typical *Fuligo cinerea* (Schw.) Morg.

"SPUMARIA LICHENIFORMIS Schw. cort. trunc. dejec. Robiniae. Bethl. Herb. Schw."

This is typical *Physarum didermoides* (Ach.) Rost.

"PHYSARUM CAESPITOSUM Schw. Herb. Schw."

Many years ago I wrote in reference to this species: "So far as I know, there is no authentic specimen in existence."[2] This specimen in the Curtis herbarium, however, must be considered as at least authentic. Unfortunately, practically nothing remains of it except traces of a thin, membranous, pale straw-colored hypothallus, and, mingled with these, numbers of spores of a pale umber color, very minutely and irregularly punctate and measuring 8–9.5 $\mu$ diam. These spores seem to me a sufficiently distinguishing feature so far as the connection of this species with *Physarum citrinellum* Pk., is concerned. They are certainly not the spores of the latter species. I can therefore only repeat, though with more assurance, my previous statement (*l. c.*) that *Physarum caespitosum* Schw. is identical with *P. virescens* Ditm. There is nothing in Schweinitz's original description which mili-

[2] Transac. Conn. Acad. A. & S. Vol. X, Pt. 2, p. 472, 1900.

tates against this view, and the character of the spores in the specimen under consideration supports it.

"(5191) PHYSARUM CHRYSOTRICHUM B. & C. lign. putr. Aut. 1854 Ala. Peters (704)."

The label reads "chrysostictum," evidently a clerical error. In the original description of the species (Grevillea, **2**: 66. 1873) the specimen number is given as 5091, but in Curtis' original MS. list it is 5191. Lister's reference of this species to *Badhamia decipiens* (Curt.) Berk. seems based on fairly sufficient evidence. The Curtis specimen shows nothing but the basal portions of a number of sessile, golden-yellow sporangia and a few violet-brown, minutely spinulose spores, 11 $\mu$ in diameter, or slightly smaller.

"PHYSARUM CUPRIPES B. & R. Ravenel (1645) & Peters (1157)."

Again by an error, the label reads "*cupriceps*." Both specimens are in wretched condition. The single sporangium found shows a very delicate capillitium with scanty and small, yellowish lime-knots, and violet-brown spores, almost smooth, and measuring 8 $\mu$ diam. A very fine specimen is to be found in Ravenel's Fung. Car. Exsicc., Fasc. III, No. 76, under the name *P. cupriceps* Berk. & Rav. Both Lister and Macbride correctly refer this species to *Physarum flavicomum* Berk.

"(6072) PHYSARUM PETERSII B. & C. Ala. superiore, Peters (982)."

This specimen, referable to *P. pulcherripes* Pk., is in comparatively good condition, though the sporangia are crushed down upon the soft substratum. Careful treatment exhibits a columella not peg-like, such as is usually seen in the "*globuliferum*" group, but varying from broadly conical to subglobose and giving rise to the columella from all parts of its surface, very much as in *Didymium nigripes* (Lk.) Fr. var. *eximium* (Pk.) List. The specimen of *P. pulcherripes* distributed in Ellis & Everhart, N. A. F., No. 3300, shows the same form of columella, and even in the case of typical *P. globuliferum* (Ell. & Ev., N. A. F., No. 1120) the columellae are large and columnar, measuring 0.8–1.5 mm. in

height and 0.3–0.5 mm. in thickness. In both specimens of *P. pulcherripes* above referred to, the stalks are slender and bulging with globular, red masses of plasmodic material, 18 $\mu$ in diameter, largely replacing the usual lime.

"PHYSARUM VERMICULARE Schw. Salem. Herb. Schw."

This is a fairly good specimen of typical *Perichaena vermicularis* (Schw.) Rost.

"(1972) DIDERMA PALLIDUM B. & C. Pine leaves and straw on the ground. Aug. 1848. Santee Canal, S. C. Ravenel (788)."

Berkeley (Grevillea, **2**: 52, 1873) referred this specimen to "*Angioridium valvatum* Fr.," a combination which apparently never existed. What Fries wrote (Index Syst. Myc., p. 51) was "*Angioridium sinuosum* Gr. (*Diderm. valvat.*? *Phys. sin.*?)." Berkeley (*l. c.*) also wrote "*Diderma pallidum* B. & C." in connection with this specimen, but since he added no description, both names are *nomina nuda,* and *Physarum bogoriense* Racib. takes precedence. Moreover, the specimen numbered 1972 in the Berkeley herbarium differs essentially from the common *Angioridium sinuosum* of Greville, according to Miss Lister (Monog., Ed. 2, p. 78). The scanty remains of the corresponding specimen in the Curtis herbarium throw no further light on the subject except in so far as the pale violet-brown, almost smooth spores, measuring 9–10 $\mu$ diam., differ from those of *P. sinuosum.*

"PHYSARUM DECIPIENS B. & C. (1333) ad Trunc. Querc. viv. Aug: Sept. Society Hill; S. C."

This is a comparatively fine specimen consisting of a number of globose or elongated sporangia, 0.5 mm. in diam., sessile, rugose, reddish-orange; capillitium of yellow branching lime-knots with no connecting threads; spores free, pale umber, minutely spinulose, 13–15 $\mu$ diam. It is, of course, *Badhamia decipiens* (Curt.) Berk.

"BADHAMIA PAPAVERACEA CORT: Quercus. Aiken, S. C. Ravenel (1768)."

This specimen is a co-type and, though somewhat scanty, shows admirably the characters distinguishing it from *B. capsulifera,* i. e., the short, stout, brown stalks on which the sporangia are borne

either singly or in pairs, and the spore-clusters consisting of only about 8 or 9 spores.

"(3578) TRICAMPHORA OBLONGA B. & C. Penn[a] 1851. Dr. Michener (407)."

This is a fine co-type, consisting of about eight sporangia, well preserved and perfectly characteristic.

"OPHIOTHECA PALLIDA B. & C. Fung. Cub. 544. (413) Herbis mucidis. July, Hillsborough, N. C."

The label bears this name written in pencil, in Curtis' handwriting, over the name *Trichia serpula* Pers. Berkeley twice refers to this specimen (413), and each time as the type of a separate species, first under *Ophiotheca pallida* (Journ. Linn. Soc. **10**: 350, 1868), and again under *O. umbrina* (Grevillea **2**: 68, 1873). It is a well-preserved and perfectly characteristic specimen of *Perichaena vermicularis* (Schw.) Rost.

"B. & C. Fung. Cub. 544 OPHIOTHECA WRIGHTII B. & C. dead wood, Cuba, C. Wright (673)."

This is a fine specimen of *Perichaena chrysosperma* (Curr.) List.

"(2991) CRATERIUM MINIMUM B. & C. in quisquiliis. Aug. 1850. Santee Canal, S. C. Ravenel (1055)."

Miss Lister (Monog., Ed. 2, p. 96) refers this to "var. *cylindricum*" of *Craterium leucocephalum* (Pers.) Ditm. Macbride considers it a distinct species. The designation "cylyndricum (Mass.)" being the first to be applied to this form as a variety, remains valid; but Macbride, regarding the form as of specific rank, rightly retains the original specific name, "*minimum* B. & C." A careful examination of the specimen under consideration reveals no points of difference between it and typical *C. leucocephalum*, except the smaller and somewhat more cylindrical sporangia of the former. I should hardly regard these differences as more than varietal.

"CRATERIUM PORPHYRIUM Schw., Herb. Schw."

Of this specimen there remain only traces of a dark purple-red hypothallus; a reddish capillitium marked with indistinct spirals,

minutely spinulose and with many free, pointed ends; and pale reddish spores. It is unquestionably *Hemitrichia Vesparium* (Batsch) Macbr.

"STEMONITIS DIGITATA Schw. Herb. Schw."

Except for the fasciculate habit, there is nothing to distinguish this specimen from *Arcyria cinerea* (Bull.) Pers.

"STEMONITIS MAXIMA Schw. Herb. Schw."

The marked difference of opinion between the leading students of Myxomycetes as to the characteristic features of *Stemonitis fusca* Roth are due, of course, to the loss of that specific type. Rostafinski describes what he considers as Roth's species and states that the spores are smooth. Macbride accepts this *dictum*, and therefore applies the name *S. fusca* (Roth) Rost. to fuscous forms having smooth or slightly warted spores. To similar forms having reticulated spores he applies the name *S. maxima* Schw. Lister, however, after examining the specimens established by Rostafinski as *S. fusca* Roth, pronounces the spores to be not smooth, as stated by Rostfinski, but delicately reticulated. It seems difficult, therefore, to escape the conclusion that forms showing reticulated spores should be placed in the *"fusca"* group. It is here that *S. maxima* Schw. belongs. The specimen in Herb. Curtis consists of a few crushed and weathered sporangia about 10 mm. in height; surface net reddish, small-meshed, meshes angular, 6–15 $\mu$ diam.; spores pale smoky brown, closely and faintly reticulate, 7 $\mu$ diam.

"(1967) STEMONITIS PORPHYRA B. & C. ad lign. muscos. Pini. Maio 1849. Santee Canal, S. C. Ravenel (744)."

Miss Lister (Monog., Ed. 2, p. 165) refers this species doubtfully to *Lamproderma columbinum* (Pers.) Rost., for which reference the original description (Grevillea **2**: 69, 1873) certainly gives some grounds. The specimen, however, is a very different thing. Though in poor condition, it shows a number of brittle, calcareous, purple stalks, 0.9 mm. long and 0.08–0.09 mm. thick, and a capillitium of the *"globuliferum"* type, but with small reddish purple lime-knots; the spores are very pale reddish, smooth, and measure 7.8 $\mu$ diam. This is evidently *Physarum*

*pulcherrimum* B. & R. Unfortunately the original description quotes no herbarium-number, so that it is impossible to determine what specimen is the type. Berkeley merely writes (*l. c.*) "on pine wood"; Curtis' MS. list says, under No. 1967, "lign: putr. Pini"; the Curtis specimen is on coniferous wood. Through the kindness of Miss A. L. Smith, of the British Museum, I am assured that of four Ravenel specimens in the Museum herbarium, all numbered 744, three were originally labelled *Stemonitis porphyra* B. & C., which name is crossed out and *Physarum pulcherrimum* B. & R. substituted, while the fourth bears only the latter name. Ravenel's No. 77 in Fung. Car. Exsicc., Fasc. II, is labelled *Physarum pulcherrimum* B. & R.; the index to the same fascicle gives *Stemonitis porphyra* B. & R., over which is pasted a label bearing the same name as the specimen. From these facts there would seem to be little doubt but that "*Stemonitis porphyra* B. & C." is *Physarum pulcherrimum* B. & R., and that one of these Ravenel specimens served Berkeley as a type notwithstanding the fact that the authority for the former name is given as "*B. & C.*" and not "*B. & R.*"

"STEMONITIS TENERRIMA M. A. C. (1343) Ad Herb: corrump. Sept. Society Hill, S. C."

From this very scanty specimen a single sporangium is narrowly cylindrical and tapering in shape, 1.7 mm. high; stalk, 0.4 mm. long; spores pale brownish, very minutely punctate, 5.8–7.2 $\mu$ diam. It is *Comatricha pulchella* (Ch. Bab.) Rost.

"STEMONITIS TRECHISPORA B. & C. Venezuela. Coll. Fendler."

I recently took occasion[3] to state my reasons for accepting, as applied to this specimen, Rostafinski's designation, "*dictyospora*," whether the form were of specific or merely varietal rank. Since that time, however, Miss Lister has kindly called my attention to the fact that this is a case similar to those cited above (*Didymium columbinum* and *D. megalosporum*), in which Article 49 of the Vienna Rules is applicable. Lister first reduced the banded-spored forms to varietal rank under *S. fusca* Roth, and applied to them the name "*trechispora*." That name, therefore, is to be accepted as the proper varietal designation. In case,

[3] MYCOLOGIA **8**: 38. 1916.

however, these banded-spored forms are considered as of specific rank, they should bear the name *Stemonitis dictyspora* Rost. The specimen before us represents the extreme limit of departure from typical *Stemonitis fusca,* the sooty-black sporangia showing hardly a trace of any surface net and the large, dark spores, measuring 11.5–13.5 μ diam. and being marked with a network of raised bands, which form a distinct border to the spore when seen in profile.

"(2992) CRIBRARIA ELEGANS B. & C. ad. lign. putr. Aug: 1855. Santee Canal, S. C. Ravenel (1044)."

This specimen agrees perfectly with the published descriptions of the species.

"(2717) CRIBRARIA MINIMA B. & C. Pine boards after rain. Julio 1849. Society Hill, S. C."

The label reads "*Cribraria microscopica,*" but the number is the one referred to in Grevillea **2**: 67 as the basis for the description of *C. minima.* The specimen is typical *C. minutissima* Schw., though very scanty.

"(1182) CRIBRARIA MICROSCOPICA B. & C. Underside of old shingles and on old rails of pine. July 1847. Society Hill, S. C. Yellow."

This specimen is in even worse condition than the preceding. The most diligent search fails to reveal a single sporangium. The published description applies to *C. minutissima.*

"ARCYRIA BICOLOR B. & C. ad ram: deject: Cuba. C. Wright. B. & C. Fung: Cub: 542."

This is in poor condition, but is distinctly referable to the "*digitata*" form of *Arcyria cinerea.*

"ARCYRIA GLOBOSA Schw. Herb. Schw."

Though a very scanty specimen, enough remains to show the distinctive features of the species.

"ARCYRIA MINOR Schw. Herb. Schw."

Miss Lister (Monog., Ed. 2, p. 242) refers this doubtfully to *Arcyria incarnata* Pers. The specimen before us shows a capillitium free from the cup, and marked with a very open spiral of

blunt ridges—characters which appear to confirm Miss Lister's opinion.

"ARCYRIA PALLIDA B. & C. ad lign: putridum. Aug. 1848. Society Hill, S. C."

This is undoubtedly *A. cinerea* (Bull.) Pers., though of a yellower color than usual.

"CRATERIUM FLORIFORME Schw. Herb. Schw."

Berkeley (Grevillea 2: 67) writes "*C. floriforme* Schwein. is a *Trichia*." Miss Lister includes it under *Hemitrichia Vesparium*, though doubtfully. The free, rarely branching, dark red elaters terminating in a long point, the solid stalk, and the orange spores 11 $\mu$ diam., place it distinctly under *Trichia Botrytis* Pers. var. *lateritia* (Lév.) List.

"LICEA ARTOCREAS B. & R. Cort: Juniperi. Martio 1850. Ravenel (1459)."

This name is attached to the specimen No. 82 in Ravenel's Fung. Car. Exsicc., Fasc. II, but the combination was never published. When Berkeley described the species, he placed it under the genus *Perichaena*, where it belongs (Grevillea 2: 68, 1873). It is typical *P. depressa* Lib. Berkeley's description of the spores as "fusiform" is due to the fact that they are shrunken. Proper treatment readily restores them to their normal form.

"PERICHAENA IRREGULARIS B. & C. subter ram. dej. putrid. Jan. 1848. Society Hill, S. C. (2478)."

This again is typical *P. depressa* Lib.

"(6081) LICEA APPLANATA B. subter ram. Querc. alba. 1856. Ala. superiore. Peters (1009)."

Two descriptions of this species were published by Berkeley, the second of which (Grevillea 2: 68, 1873) cites this specimen. It is normal *Dictydiaethalium plumbeum* (Schum.) Rost., except that the corner-strands measure nearly 7 $\mu$ diam. and are greatly thickened along the outer edge. This causes the strands to coil up like a spring when detached. A similar feature characterizes a specimen collected by Professor Roland Thaxter in Chile.

"LICEA MACROSPORA Schw. in peponibus putridis. Herb. Schw."

An examination of this specimen confirms Miss Lister's reference of the species to *Didymium difforme* (Pers.) Duby.

"LICEA MICROSPERMA B. & C. (4695) in trunc. cavo. Aug. 1853. Nova Cesarea: Laning (56)."

Through a clerical error the label reads "*microscopica*." Miss Lister refers the species to *Tubifera ferruginosa* (Batsch) Gmel., but the stipitate habit and the smaller spores (4.3–4.7 $\mu$ diam.) bring it plainly under *T. stipitata* (B. & R.) Macbr.

"LICEA RUBIFORMIS Berk. & Curt. Japan U. S. Pac. Ex. Ex. (315)."

This is a poorly developed specimen of *Tubifera ferruginosa* (Batsch) Gmel.

"LICEA SPERMOIDES B. & C. (4867) ad fol. deject. putresc. Alabama: Beaumont (349)."

This specimen is certainly referable to var. *simplex* of *Lindbladia effusa* (Ehr.) Rost. rather than to *Cribraria argillacea* Pers. (cf. Lister, Monog., Ed. 2, p. 175).

"LICEA STIPITATA B. & R."

The herbarium contains three specimens under this name, labelled respectively:

I. "Rotten logs. Oct. 1854. Bonin. U. S. Pac. Ex. Ex. (314)."

II. "Ad lign. cariosum. Cuba. C. Wright (678). B. & C. Fung: Cub. 551."

III. "Autumno. Santee Canal. H. W. Ravenel (1305)."

These specimens correspond respectively with three published descriptions, i. e.:

I. Berkeley & Curtis, Proc. Am. Acad. Arts & Sc., **4**: 125, 1858.

II. Berkeley, Journ. Linn. Soc., **10**: 350, 1868.

III. Berkeley, Grevillea, **2**: 68, 1873.

The Cuban specimen is so crushed as not to show the true habit, but the others are typical in this respect and all are characterized by small spores (4.7–5 $\mu$ diam.).

"OSTRACODERMA SPADICEUM Schw. ram. dej. Mori albae. Herb. Schw."

This name appears to have been overlooked by the monographers. It was published in Syn. Fung. Am. Bor., p. 262, 1831. The specimen is normal *Dictydiaethalium plumbeum* (Schum.) Rost.

From the above notes it will be seen that my observations are, in most cases, merely corrobrative of those recorded by the Listers. The few instances in which I have been obliged to dissent from their opinion or in which further study has resulted in changes in the hitherto accepted synonomy, are as follows:

*Didymium columbinum* B. & C.
*Tilmadoche columbina* Rost. } = *Physarum columbinum* (Rost.) Sturgis. Syn. *P. compactum* (Wing.) List.

*Didymium megalosporum* B. & C. (*ut. var.*) = *Didymium nigripes* (Lk.) Fr. var. *eximium* (Pk.) List.

*Didymium terrigenum* B. & C. = *Physarum virescens* Ditm.

*Lachnobolus cinereus* Schw. = *Fuligo cinerea* (Schw.) Morg.

*Craterium minimum* B. & C. (*ut. var.*) = *Craterium leucocephalum* (Pers.) Ditm. var. *cylindricum* (Mass.) List.

*Stemonitis porphyra* B. & C. = *Physarum pulcherrimum* B. & R.

*Craterium floriforme* Schw. = *Trichia Botrytis* Pers. var. *lateritia* (Lév.) List.

*Stemonitis trechispora* B. & C. (*ut. sp.*) = *Stemonitis dictyospora* Rost.

*Stemonitis trechispora* B. & C. (*ut. var.*) = *Stemonitis fusca* Roth. var. *trechispora* (B. & C.) List.

*Licea microsperma* B. & C. = *Tubifera stipitata* (B. & R.) Macbr.

*Ostracoderma spadiceum* Schw. = *Dictydiaethalium plumbeum* (Schum.) Rost.

UNIVERSITY MUSEUM,
CAMBRIDGE, MASSACHUSETTS.

# BASIDIOMYCETES COLLECTED IN INDO-CHINA BY C. B. ROBINSON[1]

PAUL W. GRAFF

This small collection of Basidiomycetes was made by Dr. C. B. Robinson, of the Bureau of Science, Manila, while on a short vacation trip of fifteen days to Nha-trang, Annam, Indo-China. All the specimens were collected near the town of Nha-trang, between March 11 and 26, 1911. The collection was merely an incidental one and no attempt was made to gather other fungous specimens than those which conspicuously presented themselves; hence the smallness of the number. These specimens are in the herbarium of the Bureau of Science, Manila. As one might suppose from the casual collecting, only fairly common material was obtained. The value, therefore, of the collection is not in the citation of new material but in extending the range of forms already known.

## FOMES Fries

FOMES RIMOSUS (Berk.) Fr. Nov. Symb. Myc. (1851) 66

*Polyporus rimosus* Berk. Hook. Lond. Journ. Bot. **4** (1845) 54.
*Polyporus ignarius* Fr. var. *scaber* Berk. Ann. Nat. Hist. **3** (1839) 324.
Robinson 1489.
Reported from Guiana, South Africa, and the Philippines.

## POLYSTICTUS Fries

POLYSTICTUS BOGORIENSIS (Holterm.) Sacc. & Syd. ex Sacc. Syll. Fung. **16** (1902) 157

*Polyporus bogoriensis* Holterm. Mykol. Unters. aus den Tropen (1898), 94, *pl. 9, fig. 1–8.*
Robinson 1417.

[1] Contribution from the Botanical Section of the Biological Laboratory, Bureau of Science, Manila, Philippine Islands.

Originally described from Javan material. Collected also in the Philippines.

POLYSTICTUS FLOCCOSUS (Jungh.) Fr. Epicr. Myc. (1836) 480

*Polyporus floccosus* Jungh. Flor. Crypt. Java (1838) 49.
*Trametes acutus* Cooke, Grevillea **10** (1882) 32.
*Polystictus acutus* Sacc. Syll. Fung. **6** (1888) 243.
Robinson 1458.

Previously reported from the island of Java, Australia, and the Philippines.

POLYSTICTUS MEYENII (Klotz.) Cooke, Grevillea **14** (1885) 79

*Polyporus meyenii* Klotz. Nov. Act. Acad. Nat. Cur. 19 (1843) Suppl. 236.
Robinson 1417a.

The species was originally described from Philippine material collected by Meyen in 1831. This collection extends its habitat to the Asiatic coast.

POLYSTICTUS SANGUINEUS (L.) Fr. Nov. Symb. Myc. (1851) 75

*Boletus sanguineus* L. Sp. Plant. Ed. 2 (1762) 1646.
*Xylometron sanguineum* (L.) Paul. Icon. Champ. (1793), *pl. 3, fig. 3, 4.*
*Agaricus ruber* Lamk. Encyc. Meth. Bot. **1** (1783) 50.
*Polyporus sanguineus* (L.) Mey. Flor. Esseq. (1818) 304.
*Polyporus flaccidus* Pers. ex Gaud. Bot. Freyc. Voy. Uranie (1826) 160.
*Polyporus ampliporus* Fr. Elench. Fung. **1** (1828) 99.
*Polyporus argentatus* Cooke, Grevillea **15** (1886) 20.
*Pycnoporus sanguineus* (L.) Murr. Bull. Torr. Bot. Club **31** (1904) 421.
Robinson 1286.

This species is of universal distribution throughout the tropics and one of the most common. It is very probable that it and *Polystictus cinnabarinus* (Jacq.) Fr., which is of as common distribution in the temperate zones, are but forms of the same species.

POLYSTICTUS XANTHOPUS Fr. Nov. Symb. Myc. (1851) 74

*Polyporus xanthopus* Fr. Obs. Myc. 2 (1815–1818) 255; Syst. Myc. 1 (1821) 505.

*Boletus katui* Ehrenb. ex Nees Hor. Phys. Ber. (1820) 93, *pl. 19, fig. 12.*

*Polystictus saccatus* Pers. ex Gaud. Bot. Freyc. Voy. Uranie (1826) 169, *pl. 1, fig. 3.*

*Polystictus cupro-nitens* Kalchbr. Thüm. Myc. Univ. n. 1702.

*Polystictus crassipes* Curr. Flor. Pug. p. 122.

Robinson 1388.

A species of very general tropical distribution. One of the species belonging to the *Polystictus perula* group, which also includes such related species as *P. affinis, P. flabelliformis, P. luteus, P. nepholodes, P. pterygodes,* etc., all commonly found in the Asiatic tropics and the Pacific islands.

DAEDALEA Pers.

DAEDALEA FLAVIDA Lév. Ann. Sci. Nat. Bot. III, 2 (1844) 198

*Polyporus lenziteus* Lév. ex Zoll. Vers. (1854) 17.

Robinson 1405a.

The spores of the specimens of this collection are slightly smaller than those of the same species collected in the Philippines. Otherwise, however, the material from both localities appears to be identical. The fungus was first described from material collected in Borneo by Korthals.

The species has, till now, only been reported from the two localities, Borneo and the Philippines.

DAEDALEA PALISOTI Fr. Syst. Myc. 2 (1821) 335

*Daedalea amanitoides* Beauv. Fl. Owar. 1 (1804) 44, *pl. 25.*

*Daedalea repanda* Pers. ex Gaud. Bot. Freyc. Voy. Uranie (1826) 168.

*Daedalea applanata* Kl. Linnaea 8 (1833) 481.

*Lenzites palisoti* Fr. Epicr. Myc. (1838) 404.

*Lenzites repanda* Fr. in l. c.

*Lenzites applanata* Fr. in l. c.

*Daedalea indica* Jungh. Flor. Crypt. Java (1838) 74.
*Lenzites pallida* Berk. Lond. Journ. Bot. 1 (1842) 146.
*Lenzites platypoda* Lév. Ann. Sci. Nat. Bot. III, 2 (1844) 180.
Robinson 1405.
This species is of very general tropical distribution.

DAEDALEA LURIDA Lév. Ann. Sci. Nat. Bot. III, 2 (1844) 198

*Daedalea subconfragosa* Murr. Bull. Torr. Bot. Club 35 (1908) 415.
Robinson 1421.
Robinson's collection has been compared with co-type material of *D. subconfragosa* with which it agrees perfectly and they are undoubtedly identical with Léveillé's species from Java.
Java and the Philippines seems to be the limit of distribution as yet published.

## HEXAGONIA Fries

HEXAGONIA TENUIS (Hook.) Fr. Epicrisis (1836) 498

*Boletus tenuis* Hook. ex Knuth, Syn. Plant. (1822–1825) 10.
*Boletus reticulatus* Hook. in *l. c.*, page 9.
*Polyporus tenuis* Kl. Linnaea 8 (1833) 482.
Robinson 1487.
Previously reported from Central America, Natal, Mauritius, India, and Malacca.

## LENTINUS Fries

LENTINUS EXILIS Klotz. ex Fr. Syn. Lent. (1836) 10; Fr. Epicr. Myc. (1836) 393

Robinson 1420.
Basidia cylindrical 6.5 by 33.0 $\mu$, sterigmata slightly curved 3.3 $\mu$, spores 2.2 to 2.6 by 6.6 $\mu$, cylindrical to sausage shaped, hyaline.
A species of probably general tropical distribution. Known from Cuba, Australia, Mauritius, Ceylon, and the Philippines.

MOUNT VERNON, N. Y.

# PLEUROTUS, OMPHALIA, MYCENA, AND COLLYBIA PUBLISHED IN NORTH AMERICAN FLORA

WILLIAM A. MURRILL

Volume 9, part 5, of *North American Flora,* by William A. Murrill, appeared June 7, 1916, with descriptions of the following genera and species:

| Genera | Total Species | New Species |
|---|---|---|
| *Lentodiellum* | 1 | |
| *Geopetalum* | 22 | 5 |
| *Crepidopus* | 9 | |
| *Micromphale* | 8 | 2 |
| *Leptomyces* | 5 | |
| *Omphalopsis* | 32 | 14 |
| *Galactopus* | 4 | |
| *Prunulus* | 106 | 52 |
| *Omphalina* | 31 | 15 |
| *Gymnopus* | 93 | 45 |
| | 311 | 133 |

Those preferring currently accepted generic names may use the following new combinations proposed for their benefit:

| | |
|---|---|
| GEOPETALUM GEOPHILUM | = **Pleurotus geophilus** |
| GEOPETALUM ALBESCENS | = **Pleurotus albescens** |
| GEOPETALUM SUBELATINUM | = **Pleurotus subelatinus** |
| GEOPETALUM SUBHAEDINUM | = **Pleurotus subhaedinus** |
| GEOPETALUM TREMELLIFORME | = **Pleurotus tremelliformis** |
| GYMNOPUS AGRICOLA | = **Collybia agricola** |
| GYMNOPUS AVELLANEIGRISEUS | = **Collybia avellaneigrisea** |
| GYMNOPUS AVELLANEIDISCUS | = **Collybia avellaneidisca** |
| GYMNOPUS BADIIALBUS | = **Collybia badiialba** |
| GYMNOPUS CINCHONENSIS | = **Collybia cinchonensis** |
| GYMNOPUS CREMEIMELLEUS | = **Collybia cremeimellea** |
| GYMNOPUS DENSIFOLIUS | = **Collybia densifolia** |
| GYMNOPUS DENTATUS | = **Collybia dentata** |
| GYMNOPUS DENTICULATUS | = **Collybia denticulata** |
| GYMNOPUS DOMESTICUS | = **Collybia domestica** |
| GYMNOPUS EARLEAE | = **Collybia Earleae** |
| GYMNOPUS EATONAE | = **Collybia Eatonae** |
| GYMNOPUS FARINACEUS | = **Collybia farinacea** |

GYMNOPUS FIMETARIUS = **Collybia fimetaria**
GYMNOPUS FLAVESCENS = **Collybia flavescens**
GYMNOPUS FULVIDISCUS = **Collybia fulvidisca**
GYMNOPUS FULVIPES = **Collybia fulvipes**
GYMNOPUS GLATFELTERI = **Collybia Glatfelteri**
GYMNOPUS GRISEIFOLIUS = **Collybia griseifolia**
GYMNOPUS JAMAICENSIS = **Collybia jamaicensis**
GYMNOPUS LUDOVICIANUS = **Collybia ludoviciana**
GYMNOPUS MARASMIIFORMIS = **Collybia marasmiiformis**
GYMNOPUS MONTICOLA = **Collybia monticola**
GYMNOPUS MUSICOLA = **Collybia musicola**
GYMNOPUS NIGRITIFORMIS = **Collybia nigritiformis**
GYMNOPUS OCULATUS = **Collybia oculata**
GYMNOPUS ORIZABENSIS = **Collybia orizabensis**
GYMNOPUS PALLIDUS = **Collybia pallida**
GYMNOPUS ROSEILIVIDUS = **Collybia roseilivida**
GYMNOPUS SETULOSUS = **Collybia setulosa**
GYMNOPUS SINUATUS = **Collybia sinuata**
GYMNOPUS SQUAMIGER = **Collybia squamiger**
GYMNOPUS SUBAVELLANEUS = **Collybia subavellanea**
GYMNOPUS SUBFLAVESCENS = **Collybia subflavescens**
GYMNOPUS SUBFLAVIFOLIUS = **Collybia subflavifolia**
GYMNOPUS SUBLATERICIUS = **Collybia sublatericia**
GYMNOPUS SUBNIVULOSUS = **Collybia subnivulosa**
GYMNOPUS SUBRUGOSUS = **Collybia subrugosa**
GYMNOPUS TENUIFOLIUS = **Collybia tenuifolia**
GYMNOPUS TORTIPES = **Collybia tortipes**
GYMNOPUS TRULLISATUS = **Collybia trullisata**
GYMNOPUS UNAKENSIS = **Collybia unakensis**
GYMNOPUS VIRGINIANUS = **Collybia virginiana**
GYMNOPUS VOLKERTII = **Collybia Volkertii**
GYMNOPUS XUCHILENSIS = **Collybia xuchilensis**
MICROMPHALE BADIUM = **Pleurotus badius**
MICROMPHALE FULVIFIBRILLOSUM = **Pleurotus fulvifibrillosus**
MICROMPHALE SUBEXCAVATUM = **Pleurotus subexcavatus**
OMPHALINA ACUMINATA = **Omphalia acuminata**
OMPHALINA COCCINEA = **Omphalia coccinea**
OMPHALINA COLLYBIIFORMIS = **Omphalia collybiiformis**
OMPHALINA CREMEA = **Omphalia cremea**
OMPHALINA CUSPIDATELLA = **Omphalia cuspidatella**
OMPHALINA DAWSONII = **Omphalia Dawsonii**
OMPHALINA EARLEI = **Omphalia Earlei**
OMPHALINA HYPOBRUNNEA = **Omphalia hypobrunnea**
OMPHALINA INCARNATA = **Omphalia incarnata**
OMPHALINA JALAPENSIS = **Omphalia jalapensis**
OMPHALINA LENTA = **Omphalia lenta**
OMPHALINA LUTEICOLOR = **Omphalia luteicolor**
OMPHALINA MINIATA = **Omphalia miniata**
OMPHALINA NIVEICOLOR = **Omphalia niveicolor**

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| OMPHALINA SEQUOIARUM | = **Omphalia Sequoiarum** |
| OMPHALINA SUBCARTILAGINEA | = **Omphalia subcartilaginea** |
| OMPHALINA SUBSCYPHOIDES | = **Omphalia subscyphoides** |
| OMPHALINA TEPEITENSIS | = **Omphalia tepeitensis** |
| OMPHALOPSIS BAKERI | = **Omphalia Bakeri** |
| OMPHALOPSIS CALIFORNIENSIS | = **Omphalia californiensis** |
| OMPHALOPSIS CONVEXA | = **Omphalia convexa** |
| OMPHALOPSIS CUTICOLOR | = **Omphalia cuticolor** |
| OMPHALOPSIS DISTANTIFOLIA | = **Omphalia distantifolia** |
| OMPHALOPSIS MCMURPHYI | = **Omphalia McMurphyi** |
| OMPHALOPSIS MYCENIFORMIS | = **Omphalia myceniformis** |
| OMPHALOPSIS PETASIFORMIS | = **Omphalia petasiformis** |
| OMPHALOPSIS PRAEDECURRENS | = **Omphalia praedecurrens** |
| OMPHALOPSIS PSEUDOGRISEA | = **Omphalia pseudogrisea** |
| OMPHALOPSIS RORIDULIFORMIS | = **Omphalia roriduliformis** |
| OMPHALOPSIS SUBAVELLANEA | = **Omphalia subavellanea** |
| OMPHALOPSIS SUBIMMACULATA | = **Omphalia subimmaculata** |
| OMPHALOPSIS TRANSLUCENTIPES | = **Omphalia translucentipes** |
| OMPHALOPSIS TURBINATA | = **Omphalia turbinata** |
| PRUNULUS ABRAMSII | = **Mycena Abramsii** |
| PRUNULUS ADIRONDACKENSIS | = **Mycena adirondackensis** |
| PRUNULUS ALCALINIFORMIS | = **Mycena alcaliniformis** |
| PRUNULUS ARGILLACEUS | = **Mycena argillacea** |
| PRUNULUS ATRIBRUNNEUS | = **Mycena atribrunnea** |
| PRUNULUS ATRIDISCUS | = **Mycena atridisca** |
| PRUNULUS AURANTIACUS | = **Mycena aurantiaca** |
| PRUNULUS AURANTIIDISCUS | = **Mycena aurantiidisca** |
| PRUNULUS AVELLANEIGRISEUS | = **Mycena avellaneigrisea** |
| PRUNULUS AVELLANEUS | = **Mycena avellanea** |
| PRUNULUS BREVIPES | = **Mycena brevipes** |
| PRUNULUS CAESIIALBUS | = **Mycena caesiialba** |
| PRUNULUS CARBONICOLA | = **Mycena carbonicola** |
| PRUNULUS CERVINIALBUS | = **Mycena cervinialba** |
| PRUNULUS CINCHONENSIS | = **Mycena cinchonensis** |
| PRUNULUS CINEREIAVELLANEUS | = **Mycena cinereiavellanea** |
| PRUNULUS COLLYBIIFORMIS | = **Mycena collybiiformis** |
| PRUNULUS FARINACEUS | = **Mycena farinacea** |
| PRUNULUS FLAVICITRINUS | = **Mycena flavicitrina** |
| PRUNULUS FULIGINOSUS | = **Mycena fuliginosa** |
| PRUNULUS FUMOSIAVELLANEUS | = **Mycena fumosiavellanea** |
| PRUNULUS FUSIPES | = **Mycena fusipes** |
| PRUNULUS GRACILLIPES | = **Mycena gracillipes** |
| PRUNULUS GRANTII | = **Mycena Grantii** |
| PRUNULUS LATERICIUS | = **Mycena latericia** |
| PRUNULUS LEPIOTIFORMIS | = **Mycena lepiotiformis** |
| PRUNULUS LEUCOPHAEUS | = **Mycena leucophaea** |
| PRUNULUS LONGIPES | = **Mycena longipes** |
| PRUNULUS LUDOVICIANUS | = **Mycena ludoviciana** |
| PRUNULUS MAGNUS | = **Mycena magna** |
| PRUNULUS MARGARITA | = **Mycena margarita** |

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| PRUNULUS MELLEIDISCUS | = **Mycena melleidisca** |
| PRUNULUS MINUTISSIMUS | = **Mycena minutissima** |
| PRUNULUS MURINUS | = **Mycena murina** |
| PRUNULUS MYCELIOSUS | = **Mycena myceliosa** |
| PRUNULUS NIVEIPES | = **Mycena niveipes** |
| PRUNULUS OCCIDENTALIS | = **Mycena occidentalis** |
| PRUNULUS OCHRACEICINEREUS | = **Mycena ochraceicinerea** |
| PRUNULUS PALUDICOLA | = **Mycena paludicola** |
| PRUNULUS PARVULUS | = **Mycena parvula** |
| PRUNULUS PECTINATUS | = **Mycena pectinata** |
| PRUNULUS PLUMBEIBRUNNEUS | = **Mycena plumbeibrunnea** |
| PRUNULUS PUBESCENS | = **Mycena pubescens** |
| PRUNULUS ROSEIPALLENS | = **Mycena roseipallens** |
| PRUNULUS ROSEOLUS | = **Mycena roseola** |
| PRUNULUS RUTILANTIFORMIS | = **Mycena rutilantiformis** |
| PRUNULUS SABALI | = **Mycena Sabali** |
| PRUNULUS SCABRIPES | = **Mycena scabripes** |
| PRUNULUS SUBFUMOSUS | = **Mycena subfumosa** |
| PRUNULUS SUBPULVERULENTUS | = **Mycena subpulverulenta** |
| PRUNULUS SUBTENUIPES | = **Mycena subtenuipes** |
| PRUNULUS SYRINGEUS | = **Mycena syringea** |
| PRUNULUS TENUICULUS | = **Mycena tenuicula** |
| PRUNULUS TESTACEUS | = **Mycena testacea** |
| PRUNULUS TROJANUS | = **Mycena trojana** |
| PRUNULUS VIRIDIGRISEUS | = **Mycena viridigrisea** |

NEW YORK BOTANICAL GARDEN.

## NOTES AND BRIEF ARTICLES

Dr. Heinrich Rehm, of Munich, the world's greatest authority on Ascomycetes, died on April 1 in his eighty-eighth year.

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In the Punjab hills in India, where the practice of lopping is prevalent, a serious outbreak of *Trametes Pini* has occurred which is causing severe loss in the case of *Pinus excelsa* in particular. More resistant species are recommended, as well as mixed plantings.

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In the February number of the *Journal of Agricultural Research,* H. S. Jackson reports the presence of an Asiatic species of *Gymnosporangium, G. koreaense,* in Oregon. The telial stage occurs on *Juniperus chinensis* and the pycnia and aecia on various Pomaceae.

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Professor George M. Reed, of the department of botany of the University of Missouri, has been appointed research fellow at the Brooklyn Botanic Garden for the summers of 1916 and 1917, in place of Professor W. H. Rankin, of Cornell University, who has undertaken an investigation of the white-pine blister rust in New York State. The problem to be investigated is the diseases of trees and shrubs of Prospect Park.

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Forest pathology in forest regulation is discussed by E. P. Meinecke in Bulletin 275 of the Bureau of Plant Industry at Washington, with the white fir as the chief example. The author is now at work upon the pathology of other important western timber trees.

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Professor H. H. Whetzel, of Cornell University, spent May 5–13 at the Garden working over the large and important collection of rusts and other parasitic fungi obtained by him and Dr. Olive in Porto Rico during the past winter. Professor Arthur

paid the Garden a flying visit to examine some of the rusts in this collection.

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Dr. Arthur Harmount Graves, formerly Assistant Professor of Botany in the Sheffield Scientific School of Yale University, and Instructor in Forest Botany in the Yale Forest School, has been appointed Associate Professor of Biology in the new Connecticut College for Women, at New London, Connecticut. Dr. Graves will have charge of the instruction in botany, beginning work next September.

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A disfiguring and rotting disease of mangoes caused by *Bacillus Mangiferae* is described as having appeared in South Africa in recent years. The infection is carried partly by water dripping from affected portions of the plant, but a more important carrier is found in air movements. Lignified tissues are not affected, but the organism invades parenchymatous tissues, wedging apart and killing the cells and causing dark, angular spots on the leaves. Other soft portions of the plant are also attacked. Sprays seem to have no effect.

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Dr. Thomas J. Burrill, who has been connected with the University of Illinois since 1868, died April 14, in his seventy-eighth year. He was born in Pittsfield, Massachusetts, and, after being graduated from the Illinois State Normal University in 1865, later received honorary degrees from Northwestern University and the University of Chicago. Dr. Burrill was formerly professor of natural history, botany, and horticulture at the Unisity of Illinois, from which he retired as professor emeritus in 1912. For many years he was vice-president, and for four years acting president of the University of Illinois.

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The Prickly-Pear Traveling Commission of Australia came to the conclusion that disease does not play any important part anywhere in checking the growth of prickly pear when growing under normal conditions. Only one organism, *Gloeosporium lunatum*, is regarded as of sufficient value to warrant its introduction. This is common in Texas and on warm, moist days causes rapid

and considerable destruction of young segments and of older joints if previously attacked. Another fungus, *Sclerotium Opuntiarum,* causes a disease which is somewhat serious in Argentina.

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Bulletin 371 of the New York Agricultural Experiment Station contains a description of the cause and control of the leaf blotch of horse chestnut. The disease causes the leaves to turn brown and die. It is so destructive to young seedlings that it is difficult to grow the trees from seeds and consequently most of the trees are imported, adding greatly to the expense. The disease is caused by the fungus known as *Guignardia Aesculi.* The destruction of the old leaves will do much to retard the fungus, although this is not sufficient to check it entirely. Dusting with a mixture of sulfur and arsenate of lead is a very effective means of controlling the fungus, the dusting being considered preferable to treatment with liquid spray.

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"Edible and Poisonous Mushrooms," by W. A. Murrill, appeared June 26, 1916. This work consists of a large colored chart and a handbook containing descriptions of the chief edible and poisonous species in North America, together with a discussion of edible and poisonous fungi in general and methods of preparing and cooking mushrooms. The treatment is brief, requiring only about seventy-five pages, but it covers the ground in a practical and safe way and will enable the intelligent mushroom-loving public to enjoy many of our native wild species without fear of unpleasant consequences. The author has erred rather on the side of safety, failing to figure and recommend for food the royal agaric, the blushing amanita, the sheathed amanitopsis, and many other species which are excellent and often eaten.

The chart was prepared under the author's direction by a very careful artist and is suitable for hanging on the wall in libraries and schools, as well as in botanical museums. Different backgrounds are used for the edible and poisonous species, which are separated and plainly labeled so that no mistakes can occur. The maximum of safety lies in accurate figures and descriptions not only of species that may be safely eaten but also of all the dangerous species that should be avoided.

Professor A. H. R. Buller in his article on "The Fungus Lore of the Greeks and Romans," reprinted from the *Transactions of the British Mycological Society,* recalls and discusses a number of very interesting matters connected with edible and poisonous fungi and the dawn of mycology proper. For example, the first known illustration of a fungus is said to be one of *Lactarius deliciosus,* preserved in a mural decoration at Pompeii; the *Boletus* of Pliny and other Latin authors was really *Amanita Caesarea;* the Romans obtained fire by rubbing two pieces of wood together and lighting tinder obtained from *Fomes fomentarius;* and the stone fungi of the ancients were probably simple corals with radiating plates resembling mushroom gills.

After discussing at some length the fungi known to the ancients, the author concludes, as follows: "We have now come to an end of this first chapter in the history of Mycology. We have seen that the Greeks and Romans were familiar with a good many kinds of edible and poisonous fungi, that the Romans in particular developed elaborate recipes for cooking the most desirable species, that means were taken for dealing with cases of accidental poisoning, and that certain fungi had been discovered to possess medicinal properties. On the other hand, so far as the origin and mode of reproduction of fungi are concerned, the ancients were in complete ignorance. In general, they were contented to accept a theory of spontaneous generation, and they never even suspected that fungus fruit-bodies are simply reproductive organs. The spore dust, except doubtless in the Puffballs, appears to have entirely escaped observation."

## A KNOWN SPECIES OF SMUT ON A NEW HOST[1]

In March, 1916, Mr. Paul C. Standley collected at Fort Myers, Florida, a smut on *Cyperus Gatesii* Torr., which produces similar symptoms and has the same mycological characters as *Cintractia leucoderma* (Berk.) P. Henn. The smut just mentioned has been described as attacking several species of *Rynchospora* and has been collected in Florida on at least two of these. It is to be noted that *Rynchospora* is a genus of the Cyperaceae and therefore related closely to *Cyperus.*

[1] Published by permission of the Secretary of the Smithsonian Institution.

According to Clinton[2] the sori of this fungus surround peduncles, pedicels, bases of rachises, and sometimes stems. On Cyperus, however, the sori are mostly found surrounding portions of the stems and sometimes running up on the leaf sheaths. They measure 1 to 4 cm. in length and when young are covered with a white fungal membrane which flakes away at maturity and reveals a dark agglutinated spore mass. The spores are dark-brown and verruculose, and have the form of spheres which have been compressed or concaved on one side; they thus appear to be spherical, subspherical, reniform, or irregular, depending on the side from which they are seen. Their larger diameter measures 16 to 20 microns and the compressed diameter 8 to 12 microns. These characters agree with those given by Clinton for *Cintractia leucoderma*.

H. R. ROSEN.

[2] North Am. Fl. 7: 35–36. 1906.

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